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Operative Report

Name of Patient: Dianna Berry

Date of Operation: 2-18-05

Surgeon: Dr. Stuart Kauffman

Area of Surgery: The anterolateral aspect of the 2nd rib on the right, the unmyelinated sensory terminal nerve endings (sprouts) of the lower thoracic nerve, long thoracic and intercostal nerves and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the insertions of the external oblique muscle, serratus anterior muscle and external intercostal muscles.

Total # of Procedures: 6

Total # of Lesions: 6

Fluoroscopic evaluation: 6 views

Length of Cannula: 5 cm

Anesthesia: Marcaine 0.5%, 5 cc

Medical History: Dianna reports that her worst pain is in her lower back, hip, jaw, ears, neck, and shoulder. The pain is described as constant and pulsating. The pain starts in her neck and radiates to her head. The pain occurs when she wakes up, sitting, reading, and while sleeping. Dianna gets headaches 2 times a week, they are in the back of her head on the right. Her jaw pain occurs also when she eats, yawn, swallow, and chew. She has pain in her neck when she raises her arms and lifts anything.

Dianna's lower back pain and hip pain hurt the most when she bends down or twist. When the pain starts in her back then radiating to her hip and leg. Dianna has had these areas of pain for 6 years.

Dianna was seen by Dr. Santelli, chiropractor and Dr. Heine, MD. She had a MRI done of her neck and shoulder, results are unknown.

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Pre-operative interview: Dianna was interviewed and the procedure was re-explained. An update of the original chief complaints of the patient were: right neck pain from 3 out of 10 to 2-3 out of 10 (intermittent), and right upper trapezius pain 3 out of 10 (intermittent). Patient states doing much better. Dianna reported that the prior radiofrequency procedure reduced her right C6 articular puliar pain. She follows sleeping position.

The most prominent area of tenderness that correlated with the existing chief complaints was determined during the palpation examination and selected. A fluoroscopic picture demonstrated that the tender area was the region of the anterolateral aspect of the 2nd rib on the right. A prognostic block was performed under fluoroscopic guidance with a limited volume of anesthetic solution, 1 cc, to prevent the masking of any surrounding structures. The prognostic block performed at the 2nd rib on the right decreased the right upper trapezius pain from 2-3 out of 10 to 0 out of 10. Evaluation of the appropriate indications for surgery was completed by the comprehensive relief of associated pain patterns confirming the success of the prognostic block.

Pre-operative Diagnosis:

- (1) Neuropathy of the unmyelinated sensory terminal nerve endings (sprouts) of the lower thoracic nerves, long thoracic nerves and the intercostal nerves of the thoracic on the right, and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the external oblique muscle, serratus anterior muscle and the external intercostal muscles insertions at the 2nd rib.

Post-operative Diagnosis:

- (1) Neuropathy of the unmyelinated sensory terminal nerve endings (sprouts) of the lower thoracic nerves, long thoracic nerves and the intercostal nerves of the thoracic on the right, and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the external oblique muscle, serratus anterior muscle and

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the external intercostal muscles insertions at
the 2nd rib.

Operation: Transection of the unmyelinated sensory terminal nerve endings of the lower thoracic nerve, long thoracic nerve and intercostal nerves on the 2nd rib on the right, and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the insertions of the external oblique muscle, serratus anterior muscle and the external intercostal muscles at the 2nd rib using a RFG-8 radiofrequency generator with a SMK-TC thermocouple electrode.

Description of procedure:

The surgical area was prepped and draped in the normal fashion for this type of procedure.

1.0 cc of 5% marcaine solution was injected into the tissue with the point of the needle being held in contact with the bone and periosteum. An SMK-C (5) 5 cm insulated cannula with 4mm working end was then inserted into the tissue until it was in contact with the bone, at the anteriolateral aspect of the ___ rib on the right with the solid stylet in place. The solid stylet was removed from the SMK-C (5) insulated cannula and an SMK-TC (5) thermocouple electrode was inserted in its place. The position of the tip of the cannula and the electrode was evaluated under fluoroscopy. The position of the tip was found to be in the desired place to perform the intended cautery. The RFG-8/Owl radiofrequency generator was turned on and the mode selector knob was set on stim mode. The output lever switch was turned on. The frequency was set at 2 Hertz. The stimulation voltage knob was slowly advanced to 2 1/2 volts. Attention was directed to see if any motor nerves were being stimulated, which is manifested by twitching muscles in that area. Close observation revealed no reaction. The voltage stimulation knob was returned to zero. The output lever switch was turned off. The mode selector knob was turned to lesion. The output lever switch was again turned on. The RF power knob was slowly advanced until the temperature reached 80 degrees centigrade for 60 seconds. The RF power knob was returned to zero. The output lever switch was turned off.

The entire procedure was performed 6 times. Each time the SMK-TC thermocouple electrode and the SMK-C insulated cannula were withdrawn,

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reinserted and redirected into an unrelated tissue track to independently create another lesion. Reevaluation by fluoroscopy and stimulation to determine that the new location was appropriate and distinctly different from any prior lesion placement. The 6 lesions were arranged in a linear alignment to create a horizontal row, medial and lateral to the guide needle, with even distribution while in contact with the osseous surface for the purpose of pain reception ablation of the unmyelinated sensory terminal nerve endings (sprouts) of the terminal branches of the lower thoracic nerve, long thoracic nerve, intercostal nerve and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the external oblique muscle, serratus anterior muscle and external intercostal muscle on the 2nd rib on the right. A total of 6 procedures were performed on the anterolateral aspect of the 2nd rib.

An RFG 8 Radionics generator, with a continuous revolving clock face 60 second timer, was utilized. When the 80 degree C lesion temperature was achieved, the position of the second hand was noted, and the temperature was held for one complete minute. The starting times were recorded and documented in the patient's records. The rise of the thermotrol to an 80 degree temperature was achieved in a gradual manner, usually taking 5-10 seconds. Allowing for the different starting times due to the use of the continuous revolving clock face 60 second timer, the differences in time of each lesion production at various sites, pain elicitation, patient movement, operator observance and monitoring of treatment protocol, the starting times may vary from lesion to lesion. The starting times of the 60 second cycles for each lesion are as follows:

1. 0 6. 40
2. 20
3. 30
4. 35
5. 45

Surgical Completion

Dianna was given an appropriate review of post-operative instructions, including administration of pain and antibiotic medication, application of cold pak, and additional directions regarding observance of any untoward reactions

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(fever, bleeding, excessive swelling) from surgery with advisement to call immediately. All muscles were functioning normally, special care was taken to evaluate the patient's breathing, and the patient was dismissed. Dianna has a scheduled future appointment with The Pain Center.

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Operative Report

Name of Patient: Dianna Berry

Date of Operation: 2-25-05

Surgeon: Dr. Stuart Kauffman

Area of Surgery: The anterolateral aspect of the 3rd rib on the right, the unmyelinated sensory terminal nerve endings (sprouts) of the lower thoracic nerve, long thoracic and intercostal nerves and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the insertions of the external oblique muscle, serratus anterior muscle and external intercostal muscles.

Total # of Procedures: 8

Total # of Lesions: 8

Fluoroscopic evaluation: 8 views

Length of Cannula: 5 cm

Anesthesia: Marcaine 0.5%, 5 cc

Medical History: Dianna reports that her worst pain is in her lower back, hip, jaw, ears, neck, and shoulder. The pain is described as constant and pulsating. The pain starts in her neck and radiates to her head. The pain occurs when she wakes up, sitting, reading, and while sleeping. Dianna gets headaches 2 times a week, they are in the back of her head on the right. Her jaw pain occurs also when she eats, yawn, swallow, and chew. She has pain in her neck when she raises her arms and lifts anything.

Dianna's lower back pain and hip pain hurt the most when she bends down or twist. When the pain starts in her back then radiating to her hip and leg. Dianna has had these areas of pain for 6 years.

Dianna was seen by Dr. Santelli, chiropractor and Dr. Heine, MD. She had a MRI done of her neck and shoulder, results are unknown.



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Pre-operative interview: Dianna was interviewed and the procedure was re-explained. An update of the original chief complaints of the patient were: right neck pain from 3 out of 10 to 3 out of 10 (intermittent), and right upper trapezius pain from 3 out of 10 to 3 out of 10 (intermittent). Patient states pain is less intensity and doesn't linger. Patient states feel better this week than last. Dianna reported that the prior radiofrequency procedure reduced her right 2nd rib pain. She is following sleeping position 100%.

The most prominent area of tenderness that correlated with the existing chief complaints was determined during the palpation examination and selected. A fluoroscopic picture demonstrated that the tender area was the region of the anterolateral aspect of the 3rd rib on the right. A prognostic block was performed under fluoroscopic guidance with a limited volume of anesthetic solution, 1 cc, to prevent the masking of any surrounding structures. The prognostic block performed at the 3rd rib on the right decreased the right upper trapezius pain from 3 out of 10 to 1 out of 10. Evaluation of the appropriate indications for surgery was completed by the comprehensive relief of associated pain patterns confirming the success of the prognostic block.

Pre-operative Diagnosis:

- (1) Neuropathy of the unmyelinated sensory terminal nerve endings (sprouts) of the lower thoracic nerves, long thoracic nerves and the intercostal nerves of the thoracic on the right, and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the external oblique muscle, serratus anterior muscle and the external intercostal muscles insertions at the 3rd rib.

Post-operative Diagnosis:

- (1) Neuropathy of the unmyelinated sensory terminal nerve endings (sprouts) of the lower thoracic nerves, long thoracic nerves and the intercostal nerves of the thoracic on the right, and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the external oblique muscle, serratus anterior muscle and

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the external intercostal muscles insertions at
the 3rd rib.

Operation: Transection of the unmyelinated sensory terminal nerve endings of the lower thoracic nerve, long thoracic nerve and intercostal nerves on the 3rd rib on the right, and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the insertions of the external oblique muscle, serratus anterior muscle and the external intercostal muscles at the 3rd rib using a RFG-8 radiofrequency generator with a SMK-TC thermocouple electrode.

Description of procedure:

The surgical area was prepped and draped in the normal fashion for this type of procedure.

1.0 cc of 5% marcaine solution was injected into the tissue with the point of the needle being held in contact with the bone and periosteum. An SMK-C (5) 5 cm insulated cannula with 4mm working end was then inserted into the tissue until it was in contact with the bone, at the anteriolateral aspect of the 3rd rib on the right with the solid stylet in place. The solid stylet was removed from the SMK-C (5) insulated cannula and an SMK-TC (5) thermocouple electrode was inserted in its place. The position of the tip of the cannula and the electrode was evaluated under fluoroscopy. The position of the tip was found to be in the desired place to perform the intended cautery. The RFG-8 radiofrequency generator was turned on and the mode selector knob was set on stim mode. The output lever switch was turned on. The frequency was set at 2 Hertz. The stimulation voltage knob was slowly advanced to 2 1/2 volts. Attention was directed to see if any motor nerves were being stimulated, which is manifested by twitching muscles in that area. Close observation revealed no reaction. The voltage stimulation knob was returned to zero. The output lever switch was turned off. The mode selector knob was turned to lesion. The output lever switch was again turned on. The RF power knob was slowly advanced until the temperature reached 80 degrees centigrade for 60 seconds. The RF power knob was returned to zero. The output lever switch was turned off.

The entire procedure was performed 8 times. Each time the SMK-TC thermocouple electrode and the SMK-C insulated cannula were withdrawn,

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reinserted and redirected into an unrelated tissue track to independently create another lesion. Reevaluation by fluoroscopy and stimulation to determine that the new location was appropriate and distinctly different from any prior lesion placement. The 8 lesions were arranged in a linear alignment to create a horizontal row, medial and lateral to the guide needle, with even distribution while in contact with the osseous surface for the purpose of pain reception ablation of the unmyelinated sensory terminal nerve endings (sprouts) of the terminal branches of the lower thoracic nerve, long thoracic nerve, intercostal nerve and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the external oblique muscle, serratus anterior muscle and external intercostal muscle on the 3rd rib on the right. A total of 8 procedures were performed on the anterolateral aspect of the 3rd rib.

An RFG 8 Radionics generator, with a continuous revolving clock face 60 second timer, was utilized. When the 80 degree C lesion temperature was achieved, the position of the second hand was noted, and the temperature was held for one complete minute. The starting times were recorded and documented in the patient's records. The rise of the thermotrol to an 80 degree temperature was achieved in a gradual manner, usually taking 5-10 seconds. Allowing for the different starting times due to the use of the continuous revolving clock face 60 second timer, the differences in time of each lesion production at various sites, pain elicitation, patient movement, operator observance and monitoring of treatment protocol, the starting times may vary from lesion to lesion. The starting times of the 60 second cycles for each lesion are as follows:

- | | |
|-------|-------|
| 1. 15 | 6. 10 |
| 2. 25 | 7. 15 |
| 3. 35 | 8. 25 |
| 4. 45 | |
| 5. 55 | |

Surgical Completion

Dianna was given an appropriate review of post-operative instructions, including administration of pain and antibiotic medication, application of cold pak, and additional directions regarding observance of any untoward reactions

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(fever, bleeding, excessive swelling) from surgery with advisement to call immediately. All muscles were functioning normally, special care was taken to evaluate the patient's breathing, and the patient was dismissed. Dianna has a scheduled future appointment with The Pain Center.

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Operative Report

Name of Patient: Dianna Berry

Date of Operation: 3-4-05

Surgeon: Dr. Stuart Kauffman

Area of Surgery: The extreme anterolateral aspect of the 2nd rib on the right, the unmyelinated sensory terminal nerve endings (sprouts) of the lower thoracic nerve, long thoracic and intercostal nerves and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the insertions of the external oblique muscle, serratus anterior muscle and external intercostal muscles.

Total # of Procedures: 8

Total # of Lesions: 8

Fluoroscopic evaluation: 8 views

Length of Cannula: 5 cm

Anesthesia: Marcaine 0.5%, 5 cc

Medical History: Dianna reports that her worst pain is in her lower back, hip, jaw, ears, neck, and shoulder. The pain is described as constant and pulsating. The pain starts in her neck and radiates to her head. The pain occurs when she wakes up, sitting, reading, and while sleeping. Dianna gets headaches 2 times a week, they are in the back of her head on the right. Her jaw pain occurs also when she eats, yawn, swallow, and chew. She has pain in her neck when she raises her arms and lifts anything.

Dianna's lower back pain and hip pain hurt the most when she bends down or twist. When the pain starts in her back then radiating to her hip and leg. Dianna has had these areas of pain for 6 years.

Dianna was seen by Dr. Santelli, chiropractor and Dr. Heine, MD. She had a MRI done of her neck and shoulder, results are unknown.


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Pre-operative interview: Dianna was interviewed and the procedure was re-explained. An update of the original chief complaints of the patient were: right neck pain from 3 out of 10 to 4-5 out of 10, and right trapezius pain 3 out of 10. Dianna reported that the prior radiofrequency procedure reduced her right 3rd rib (lateral) pain. She follows sleeping position.

The most prominent area of tenderness that correlated with the existing chief complaints was determined during the palpation examination and selected. A fluoroscopic picture demonstrated that the tender area was the region of the extreme anterolateral aspect of the 2nd rib on the right. A prognostic block was performed under fluoroscopic guidance with a limited volume of anesthetic solution, 1 cc, to prevent the masking of any surrounding structures. The prognostic block performed at the 2nd rib on the right decreased the right neck pain from 5 out of 10 to 3 out of 10, and right upper trapezius pain from 5 out of 10 to 1 out of 10. Evaluation of the appropriate indications for surgery was completed by the comprehensive relief of associated pain patterns confirming the success of the prognostic block.

Pre-operative Diagnosis:

- (1) Neuropathy of the unmyelinated sensory terminal nerve endings (sprouts) of the lower thoracic nerves, long thoracic nerves and the intercostal nerves of the thoracic on the right, and the extreme bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the external oblique muscle, serratus anterior muscle and the external intercostal muscles insertions at the 2nd rib.

Post-operative Diagnosis:

- (1) Neuropathy of the unmyelinated sensory terminal nerve endings (sprouts) of the lower thoracic nerves, long thoracic nerves and the intercostal nerves of the thoracic on the right, and the extreme bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the external oblique muscle,

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serratus anterior muscle and the external intercostal muscles insertions at the 2nd rib.

Operation: Transection of the unmyelinated sensory terminal nerve endings of the lower thoracic nerve, long thoracic nerve and intercostal nerves on the 2nd rib on the right, and the extreme bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the insertions of the external oblique muscle, serratus anterior muscle and the external intercostal muscles at the 2nd rib using a RFG-8 radiofrequency generator with a SMK-TC thermocouple electrode.

Description of procedure:

The surgical area was prepped and draped in the normal fashion for this type of procedure.

1.0 cc of 5% marcaine solution was injected into the tissue with the point of the needle being held in contact with the bone and periosteum. An SMK-C (5) 5 cm insulated cannula with 4mm working end was then inserted into the tissue until it was in contact with the bone, at the extreme anteriolateral aspect of the 2nd rib on the right with the solid stylet in place. The solid stylet was removed from the SMK-C (5) insulated cannula and an SMK-TC (5) thermocouple electrode was inserted in its place. The position of the tip of the cannula and the electrode was evaluated under fluoroscopy. The position of the tip was found to be in the desired place to perform the intended cautery. The RFG-8 radiofrequency generator was turned on and the mode selector knob was set on stim mode. The output lever switch was turned on. The frequency was set at 2 Hertz. The stimulation voltage knob was slowly advanced to 2 1/2 volts. Attention was directed to see if any motor nerves were being stimulated, which is manifested by twitching muscles in that area. Close observation revealed no reaction. The voltage stimulation knob was returned to zero. The output lever switch was turned off. The mode selector knob was turned to lesion. The output lever switch was again turned on. The RF power knob was slowly advanced until the temperature reached 80 degrees centigrade for 60 seconds. The RF power knob was returned to zero. The output lever switch was turned off.

The entire procedure was performed 8 times. Each time the SMK-TC thermocouple electrode and the SMK-C insulated cannula were withdrawn,

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reinserted and redirected into an unrelated tissue track to independently create another lesion. Reevaluation by fluoroscopy and stimulation to determine that the new location was appropriate and distinctly different from any prior lesion placement. The 8 lesions were arranged in a linear alignment to create a horizontal row, medial and lateral to the guide needle, with even distribution while in contact with the osseous surface for the purpose of pain reception ablation of the unmyelinated sensory terminal nerve endings (sprouts) of the terminal branches of the lower thoracic nerve, long thoracic nerve, intercostal nerve and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the external oblique muscle, serratus anterior muscle and external intercostal muscle on the 2nd rib on the right. A total of 8 procedures were performed on the anterolateral aspect of the 2nd rib.

An RFG 8 Radionics generator, with a continuous revolving clock face 60 second timer, was utilized. When the 80 degree C lesion temperature was achieved, the position of the second hand was noted, and the temperature was held for one complete minute. The starting times were recorded and documented in the patient's records. The rise of the thermotrol to an 80 degree temperature was achieved in a gradual manner, usually taking 5-10 seconds. Allowing for the different starting times due to the use of the continuous revolving clock face 60 second timer, the differences in time of each lesion production at various sites, pain elicitation, patient movement, operator observance and monitoring of treatment protocol, the starting times may vary from lesion to lesion. The starting times of the 60 second cycles for each lesion are as follows:

- | | |
|-------|-------|
| 1. 20 | 6. 10 |
| 2. 30 | 7. 20 |
| 3. 40 | 8. 30 |
| 4. 50 | |
| 5. 0 | |

Surgical Completion

Dianna was given an appropriate review of post-operative instructions, including administration of pain and antibiotic medication, application of cold pak, and additional directions regarding observance of any untoward reactions

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(fever, bleeding, excessive swelling) from surgery with advisement to call immediately. All muscles were functioning normally, special care was taken to evaluate the patient's breathing, and the patient was dismissed. Dianna has a scheduled future appointment with The Pain Center.

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